

SECTION 8

COMPARATIVE ANALYSIS OF RESPONSE ACTION ALTERNATIVES

8.1 INTRODUCTION

8.1.1 After the screening of each of the alternatives on their ability to meet the minimum requirements of the evaluation criteria, a comparative analysis is conducted to determine the relative performance of the remaining alternatives in each of the same criteria. The purpose of this comparison is to determine the advantages and disadvantages of each of the alternatives relative to one another. This analysis is used to support the selection of the preferred response action alternative.

8.1.2 Each alternative will be ranked relative to all of the other alternatives for Effectiveness, Implementability, and Cost. For the 312-acre parcel, the rankings will include the three alternatives that remained after the screening. These alternatives include institutional controls, surface clearance of OE, and surface and subsurface OE clearance to depth.

8.1.3 The rankings under the Effectiveness category involve the consideration of four criteria. A ranking value of 1 through 3 will be assigned to each alternative, with 1 representing the best alternative. In the case of two or more alternatives being equal for a criterion, an average ranking value will be used for each alternative that is of equal value in the criterion. Ranking values will be totaled for each alternative and the one with the lowest overall score will be the preferred alternative. The effectiveness criteria ranking values will be used to determine the overall Effectiveness ranking. The overall Effectiveness ranking will then be used in conjunction with the Implementability and Cost rankings to provide an overall ranking of the alternatives.

8.1.4 The rankings under the Implementability category involve the consideration of six criteria. A ranking value of 1 through 3 will be assigned to each alternative, with 1 representing the best alternative in the category. The Property Owner Acceptance criteria will be weighted by a factor of two (i.e., the ranking values will be multiplied by two). The implementability criteria ranking values will be used to determine the overall Implementability

ranking. The lowest overall score indicates the most implementable alternative. The overall Implementability rankings will then be used in conjunction with the Effectiveness and Cost rankings to derive an overall ranking of the alternatives.

8.1.5 The cost estimates for each alternative are discussed in Section 7. Appendix F provides a more detailed breakdown of the costs for each alternative and the assumptions used in preparing the cost estimates. The cost estimate for each alternative is an order of magnitude estimate which gives a general estimate of the level of effort that will be required to complete each alternative.

8.2 EFFECTIVENESS

8.2.1 Each of the three alternatives remaining after the screening in Section 7 was subjectively ranked under the Effectiveness category. The results of this ranking process are outlined in Table 8.1. Based on this analysis, the Surface and Subsurface Clearance of OE to Depth alternative ranked the highest in the Effectiveness category. The logic behind the rankings for the evaluation criteria is provided in the following paragraphs.

8.2.2 Overall Protection of Public Safety and Human Environment: In this criterion, the Surface and Subsurface Clearance of OE to Depth alternative provides the best overall protection, with each of the other alternatives providing decreasing levels of overall protection. This ranking has been made as a result of the assumption that the more ambitious OE response alternatives will recover additional OE items and will provide for a more thorough clean up of the site. For that reason, each alternative was ranked in order with the Surface and Subsurface Clearance of OE to depth alternative being ranked number one and the Institutional Controls alternative being ranked last.

TABLE 8.1
COMPARATIVE ANALYSIS OF EFFECTIVENESS
312-ACRE PARCEL

8.2.3 Compliance with ARARs: As described in Section 7, special consideration of ARARs that address activities within wetlands or areas exhibiting the characteristics of a wetland may be necessary for the Surface Clearance of OE and Surface and Subsurface Clearance of OE to Depth alternatives. For the purpose of this evaluation it is being assumed that any steps necessary to comply with these ARARs would be addressed if one of these alternatives were to be implemented. Therefore, since all the remaining alternatives would comply with ARARs, they have been ranked equally with a score of two.

8.2.4 Long-Term Effectiveness: In this criterion, the Surface and Subsurface Clearance of OE to Depth alternative provides for the best long-term effectiveness with each of the other alternatives providing for decreasing degrees of long-term effectiveness. This rank order has been selected for the same reasoning as that provided under the Overall Protection category. Therefore, the three alternatives were rank ordered from one to three with the Surface and Subsurface Clearance of OE to Depth alternative being ranked number one and the Institutional Controls alternative being ranked last.

8.2.5 Short-Term Effectiveness: In this criterion, the Institutional Controls alternative provides for the greatest protection of workers and local citizens during the implementation of the alternative with each of the subsequent alternatives providing for lesser degrees of protection. For this reason, this criterion has a rank order that has Institutional Controls as first and Surface and Subsurface Clearance of OE to Depth as last.

8.3 IMPLEMENTABILITY

8.3.1 The three alternatives were also ranked within each of the six criteria within the Implementability category based on a subjective analysis of the merits of each alternative. The results of this analysis are presented in Table 8.2. Based on this comparative analysis, the Surface Clearance of OE and Surface and Subsurface Clearance of OE to Depth alternatives tied for the highest ranking among the three alternatives examined in the Implementability category for the 312-acre parcel. The logic behind the rankings for the evaluation criteria is provided in the following paragraphs.

TABLE 8.2

IMPLEMENTABILITY

8.3.2 Technical Feasibility: In this category, the alternatives were ranked with the Institutional Controls alternative being the easiest to implement while the Surface and Subsurface Clearance of OE to Depth alternative being the most difficult to implement from a technical standpoint.

8.3.3 Administrative Feasibility: The Institutional Controls alternative requires coordination amongst numerous agencies and all segments of the local population in order to be effectively implemented. This alternative also requires a long-term commitment, including annual reinforcement, from numerous agencies and the public to ensure that the controls remain effective. Administratively, the clearance alternatives are easier to implement than the Institutional Controls alternative. Although the clearance alternatives differ in the depth of clearance and therefore differ in the technical effort required, the administrative effort is essentially the same. For these reasons, the Surface Clearance of OE and Surface and Subsurface Clearance of OE to Depth alternatives have been ranked equally with a value of 1.5 and the Institutional Controls alternative has been ranked number three.

8.3.4 Availability of Services and Materials: In this criterion, the required services and materials are easily obtained for all the alternatives. The Institutional Controls alternative requires the least amount of services and materials and as such was ranked number one. The other alternatives were ranked equally with a value of 2.5.

8.3.5 Property Owner Acceptance: Each alternative is rated based on the degree of acceptance expressed by the current property owner. As mentioned previously, the current property owner's ranking is multiplied by a factor of two. This weighting is reflected in Table 8.2. The JPG Base Transition Coordinator provided the rankings in this criterion. The Surface and Subsurface Clearance of OE to Depth alternative was ranked as the preferred alternative from the property owner's perspective, with the Surface Clearance of OE being ranked second, and the Institutional Controls alternative being ranked last.

8.3.6 Local Agency Acceptance: Various regulatory agencies were contacted during the preparation of the EE/CA. These agencies indicated that they would like to see the most unrestricted use of the property after the U.S. Army sells the property. Therefore, the most ambitious clearance alternative (Surface and Subsurface Clearance of OE to Depth) has been ranked as the preferred alternative from the perspective of local agencies and the Institutional Controls alternative was ranked last.

8.3.7 Community Acceptance: Community acceptance of the remaining alternatives was provided by the members of the JPG RAB. The Surface Clearance of OE alternative was ranked the highest by the RAB, followed by the Institutional Control alternative. The Surface and Subsurface Clearance of OE to Depth alternative was ranked third from the community's perspective.

8.4 COST

The least expensive alternative to implement for the 312-acre area is the Institutional Controls alternative while the most expensive alternative is the Surface and Subsurface Clearance of OE to Depth alternative. Detailed cost estimates for these alternatives are provided in Appendix F.

8.5 OVERALL RANKING FOR THE 312-ACRE PARCEL

The overall ranking of the three alternatives for the 312-acre parcel is presented in Table 8.3. This overall ranking is based on the three categories - Effectiveness, Implementability, and Cost as discussed above. Using the same methodology as was used in the previous categories, the preferred alternative for the 312-acre parcel is the one with the lowest overall score. Based on this analysis, the Surface Clearance of OE and the Surface and Subsurface Clearance of OE to Depth alternatives tied in the ranking as the preferred alternative for the 312-acre parcel. As there was a tie in the recommended alternative for the site, the Army has elected to conduct the more conservative response action. Therefore, the Surface and Subsurface Clearance of OE to Depth alternative has been selected as the preferred alternative for the 312-acre parcel.

Table 8.3